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Skylab Report: "Remote Sensing Geophysics from Skylab" #487 Kenneth Watson, P.I., USGS

Status during September

1. Our request for the remaining bands of S192 data (see Skylab Report July (Aug) for rock type discrimination and mineralization study was modified to a more limited time set (approx 5 secs). This reduced the amount of data to a more manageable number of tape reels.

2. We received the magnetic tape of the S194 microwave data for the Skylab June overflight.

3. Topographic profiles and a topographic map have been prepared from the stereo photography acquired during the aircraft underflight of Skylab. The data will be used in surface roughness analysis of the Skylab data at scales of centimeters to tens of meters to develop models of surface scattering and determine criteria for discrimination of geologic units.

4. The new computer thermal model has been extended to include the efforts of albedo, emissivity, and thermal inertia; sky radiance; topographic slope; and site latitude and solar declination. Results so far indicate that thermal inertia mapping can be achieved using data acquired at two times in the diurnal cycle: noon $\pm$ 2 hours and midnight $\pm$ 3 hours. Geothermal mapping will require data being obtained at three times in the diurnal cycle roughly at 8 hour intervals.

Requirements

1. We anticipate receipt of the S192 magnetic tapes shortly so that we can begin the computer processing.

2. We have still not received any channel 13, S192 screening data for thermal analysis. It is our understanding that several problems

have affected the quality of this data but that there is still hope that filtering techniques may improve the images. As pointed out in the previous monthly report, the lack of useful thermal data will have a significant inpact on our analysis of the Skylab data.